

15This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.**

## **REMARKS**

### **Specification Objections**

The disclosure stands objected for failing to define the abbreviations "PS", "PBT", and "PET". However, Applicants respectfully submit that these abbreviations are well known to one of skill in the art and represent, respectively, polystyrene, polybutylene terephthalate, and polyethylene terephthalate as depicted at page A-12 of *Modern Plastics Encyclopedia '99*, Issue Volume 75, Number 12, Mid-November 1998. See attached. As a result, Applicants respectfully submit that these objections should be withdrawn.

### **Claim Rejections Under 35 U.S.C. §101 and 112, second paragraph**

Claims 1-12 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Particularly, the Action alleges that:

- 1) "characterized in that" in claims 1-12 is a relative term which renders the claim indefinite;
- 2) "intrinsically" is unclear in claim 1;
- 3) "difficult" is a relative term in claim 1 which renders the claim indefinite;
- 4) "the plastics system" has insufficient antecedent basis in claims 4 and 8;
- 5) "retained in" as used in claim 5 is unclear;
- 6) "the light sensitive pigments" has insufficient antecedent basis in claim 8;
- 7) providing for the use of laser-markable plastics in claim 11 is unclear and is not a proper process claim; and
- 8) "high-temperature-resistant plastic" in claim 2 is a relative term which is indefinite.

With respect to rejection grounds 4) and 7), claims 4, 8, and 11 have been amended to obviate these rejections. As such, Applicants respectfully request that these rejections be withdrawn.

Regarding the rejection grounds 1-3, 5-6, and 8, Applicants respectfully submit that the Action has failed to provide any evidence (e.g., affidavit, other patents) that the ordinary artisan would be unable to readily ascertain the metes and bounds of the claimed invention. As such, there is no prima facie case of indefiniteness for the claims subject to rejection grounds 1-3, 5-6, and 8.

Furthermore, the primary purpose of the definiteness requirement is that the claim language is clear so the public is informed of the boundaries of what constitutes infringement of the patent (M.P.E.P. §2173). The claims meet this standard by defining the subject matter with a

reasonable degree of particularly and distinctness (M.P.E.P. §2173.02) by specifying the plastics and materials comprised therein. Thus, the ordinary artisan can readily ascertain the metes and bounds of the claimed invention. If the scope of the subject matter embraced by the claims is clear, and if Applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. §112, second paragraph (M.P.E.P. §2173.04).

Consequently, because the claims are sufficiently definite, Applicants respectfully request that these rejections be withdrawn.

#### **Claim Rejections Under 35 U.S.C. §103(a)**

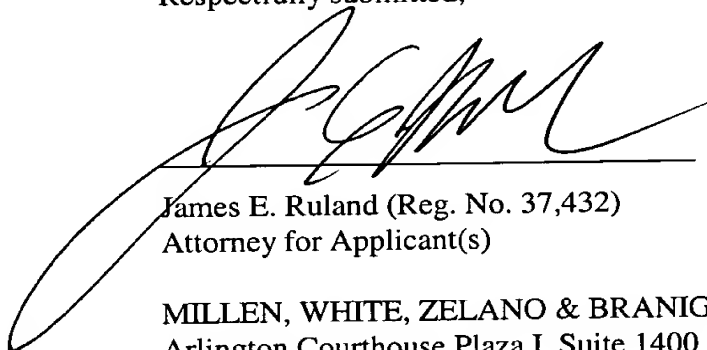
Claims 1-12 stand rejected as allegedly being unpatentable over WO 95/30716 (WO) in further view of EP 0 367 629 (EP). The Action admits WO does not disclose laser-markable plastics comprising color pigments. In addition, the Action alleges that EP discloses that plastics may include pigment. The Action concludes that it would be obvious to employ the color pigments of EP in the laser-markable plastics of WO employs light-sensitive pigments.

However, Applicants respectfully submit that the Office has the burden to establish a prima facie case of obviousness. What is more, the mere fact that references can be combined or modified does not render the resultant combination prima facie obvious unless the prior art also suggests the desirability of the combination. See *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

The Action utterly fails to provide any rationale or evidence that one of skill in the art would be motivated to combine these references. Particularly, the Action fails to cite any desirability disclosed in WO to use the color pigments of EP. Rather, WO uses metal oxides. As such, there is no desirability to combine the teachings of these references. Because the combination of references is untenable, there is no prima facie case of obviousness. As such, Applicants respectfully submit that the rejections should be withdrawn.

In view of the above remarks, favorable reconsideration is courteously requested. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned, "**VERSION WITH MARKINGS TO SHOW CHANGES MADE**". If there are any remaining issues which can be expedited by a telephone conference, the Examiner is courteously invited to telephone Counsel at the number indicated below.

Respectfully submitted,

A large, stylized handwritten signature in black ink, likely belonging to James E. Ruland, is written over a horizontal line.

James E. Ruland (Reg. No. 37,432)  
Attorney for Applicant(s)

MILLEN, WHITE, ZELANO & BRANIGAN, P.C.  
Arlington Courthouse Plaza I, Suite 1400  
2200 Clarendon Boulevard  
Arlington, Virginia 22201  
(703) 812-5338  
(703) 243-6410 [Facsimile]  
Internet Address: ruland@mwzb.com

**Filed: November 5, 2001**

JER:\BART\CLIENTS\MERCK\2038\AMENDMENT OF 11-01.DOC

## VERSION WITH MARKINGS TO SHOW CHANGES MADE

### IN THE CLAIMS

Claims 4, 8 and 11 has been amended as follows:

4. (Twice Amended) Laser-markable plastics according to Claim 1, characterized in that the proportion of the absorber material based on ~~the~~ a plastics system is 0.1 - 10% by weight.

8. (Twice Amended) Laser-markable plastics according to Claim 1, characterized in that the proportion of ~~the~~ light-sensitive pigments in the plastic is from 0 to 5% by weight, based on ~~the~~ a plastics system.

11. (Amended) ~~Use of the laser-markable plastics according to Claim 1 as material~~ A method for producing mouldings which are comprising marking ~~marked~~ with the aid of lasers laser-markable plastics according to Claim 1.

K:\merck\2038\amendment of 11-01.doc



**MODERN  
PLASTICS**

**ENCYCLOPEDIA  
'99**

**WITH  
BUYERS'  
GUIDE**

# MID-NOVEMBER 1998 ISSUE VOLUME 75 NUMBER 12

Reaction injection molding (Machinery specifier charts)	D-174
Rotational molding (Machinery specifier charts)	D-179
Thermoforming, roll fed	D-181
Thermoforming, sheet fed	D-184
Thermoforming equipment (Machinery specifier charts)	D-187
Transfer molding (Machinery specifier charts)	D-207
Transfer molding equipment (Machinery specifier charts)	D-208

Screen changers (Supplier descriptions)	E-48
Screws and barrels (Supplier descriptions)	E-49
Sensors, monitors, and controls (Supplier descriptions)	E-51
Testing equipment and instrumentation (Supplier descriptions)	E-55
	E-58
	E-60
	E-63
	E-66

<b>Fabricating &amp; finishing</b>	<b>F-3</b>
Adhesives (Supplier descriptions)	F-3
Decorating and printing (Supplier descriptions)	F-6
Welding and sealing (Supplier descriptions)	F-7
	F-9
	F-12
	F-15

## Auxiliary equipment & components E-3

Computer-aided engineering	E-3
Dryers (Supplier descriptions)	E-5
Granulators and pulverizers (Supplier descriptions)	E-8
Heaters (Supplier descriptions)	E-11
Metering and feeding (Supplier descriptions)	E-12
Mold temperature controllers and chillers (Supplier descriptions)	E-17
Parts-handling equipment (Supplier descriptions)	E-20
Pelletizers	E-22
Dicers (Supplier descriptions)	E-24
Raw materials handling (Supplier descriptions)	E-28
Recycling equipment and systems (Supplier descriptions)	E-29
	E-30
	E-33
	E-34
	E-36
	E-37
	E-38
	E-40
	E-42
	E-45
	E-46

<b>Buyers' Guide</b>	<b>G-3</b>
Classified products index	G-3
Classified products listing	G-5
Ancillary materials and reinforcements	G-19
Auxiliary equipment and systems	G-43
Primary processing machinery	G-36
Resins and compounds	G-5
Semi-finished materials	G-31
Services	G-77
Supplies	G-73
Advertiser literature	G-87
Supplier listing: index of companies and addresses	G-94
Trade name directory	G-151
Reader service cards	G-162A
Advertisers' Index	G-172

**Managing Editor**  
William A. Kaplan

**Associate Editor**  
Iris N. Topel

**Production Group Director**  
Deborah David

**Art Director**  
Anthony A. Landi

**Advertising/Production Assistant**  
Nina Quintana

**Editorial Assistant**  
Elvira Avagliano

**Technical Illustrator**  
James B. Stone

**Editor-in-Chief**  
Patrick A. Toensmeier

**Vice President - Publisher**  
Thomas Nübling

**Senior Vice President, Operations**  
H. Bruce Ryno

**Executive Vice President, Publication Services**  
Norbert Schumacher

Cover photo courtesy of  
Clariant Masterbatches Division,  
Easton, Maryland.

Officers of The McGraw-Hill Companies, Inc.: Joseph L. Diorio, chairman; Harold W. McGraw III, president and chief executive officer; Kenneth M. Vittor, senior vice president and general counsel; Robert J. Bahash, executive vice president and chief financial officer; Frank D. Pangloss, senior vice president, treasury operations; Scott L. Bennett, senior vice president and secretary; Vasant Prabhu, president, information and media services group; Norbert Schumacher, executive vice president, publication services.

Please mail all circulation correspondence, subscription orders, and change of address notices to Modern Plastics (ISSN 0026-8275), P.O. Box 602, Hightstown, NJ 08520. Postmaster: Send address changes to Modern Plastics, Attention: Fulfillment Manager, P.O. Box 602, Hightstown, NJ 08520. Modern Plastics has no connection with any company of similar name. Modern Plastics printed in U.S.A. Publication office: Two Penn Plaza, New York, NY 10121. Modern Plastics issued monthly with additional issues in November. Periodicals postage paid at New York, NY and additional mailing offices. Registered for GST as The McGraw-Hill Companies, Inc. GST #R1230 75673. Canada Post International Publications Mail Product Sales Agreement No. 246530. Available only by paid subscription. Please allow 6 to 8 weeks for shipment. Modern Plastics solicits subscriptions from management, engineering, manufacturing, R&D, scientific and technical, purchasing and marketing professionals involved in the plastics field. Publisher reserves the right to refuse any subscription. Subscription rates: (incl. Modern Plastics annual Encyclopedia issue): in the U.S. and its possessions, 1 yr. \$41.75, 2 yrs. \$62.70, 3 yrs. \$83.50; in Canada, 1 yr. \$CDN 67.00, 2 yrs. \$CDN 100.00, 3 yrs. \$CDN 133.00; in Mexico, 1 yr. MexN\$1250.00, 2 yrs. MexN\$945.00, 3 yrs. MexN\$1250.00. Single copies (except for Encyclopedia issue) in U.S. \$6 each; in Canada, \$CDN9.00; in Mexico US\$10.00; Elsewhere US\$20.00. Price when Encyclopedia issue sold separately is \$90. For subscriber service, call 1-800/525-5003 9 AM - 5 PM EST in the U.S. except Alaska and Hawaii, 609/426-7070. The name 'Modern Plastics' is Registered © U.S. Pat. Off., including Reg., mark Plasticscope © Copyright © 1998 The McGraw-Hill Companies, Inc. All rights reserved.

PERMISSIONS: where necessary, permission is granted by the copyright owner for libraries and others registered with the Copyright Clearance Center (CCC) to photocopy any article herein for the flat fee of \$5.00 per copy of the article. Payment should be sent directly to the CCC, 222 Rosewood Drive, Danvers, MA 01923. Copying done for other than personal or internal reference use without the express permission of The McGraw-Hill Companies is prohibited. Requests for special permission or bulk orders should be addressed to the publisher. ISSN 0026-8275/98 \$6.00 Subscription service: 609-426-7070 or 1-800-525-5003; Fax: 609-426-5592.



## ABBREVIATIONS

The following is a partial list of abbreviations for chemical, marketing, scientific, and technical terms that are frequently used by writers of articles in *Modern Plastics Encyclopedia*. Due to changing standards of chemical nomenclature, certain products listed here may be seen in other formats with some variation in the name.

AAGR	average annual growth rate	EAA	ethylene acrylic acid
AS	atomic absorption spectroscopy	EB	electron beam
ABA	acrylonitrile-butadiene-acrylate	EBA	ethylene butyl acrylate
ABS	acrylonitrile-butadiene-styrene copolymer	EC	ethyl cellulose
ACM	acrylic acid ester rubber	ECTFE	ethylene-chlorotrifluoroethylene copolymer
ACS	acrylonitrile-chlorinated-PE-styrene	EEA	ethylene-ethyl acrylate
AES	acrylonitrile-ethylene-propylene-styrene	EG	ethylene glycol
AMMA	acrylonitrile-methyl methacrylate	EMA	ethylene-methyl acrylate
AN	acrylonitrile	EMAA	ethylene methacrylic acid
AO	antioxidant	EMAC	ethylene-methyl acrylate copolymer
APET	amorphous polyethylene terephthalate	EMC	electromagnetic compatibility
APP	atactic polypropylene	EMI	electromagnetic interference
ASA	acrylic-styrene-acrylonitrile	EMPP	elastomer modified polypropylene
ASTM	American Society for Testing and Materials	EnBA	ethylene normal butyl acrylate
ATH	aluminum trihydrate	EP	epoxy resin, also ethylene-propylene
AZ(O)	azodicarbonamide	EPA	Environmental Protection Agency
BATF	Bureau of Alcohol, Tobacco, and Firearms	EPDM	ethylene-propylene terpolymer rubber
BM	blow molding	EPM	ethylene-propylene rubber
BMC	bulk molding compounds	EPS	expandable polystyrene
BMi	bismaleimide	ESCR	environmental stress crack resistance
BO	biaxially-oriented (film)	ESI	ethylene-styrene copolymers
BOPP	biaxially-oriented polypropylene	ETE	engineering thermoplastic elastomers
BR	butadiene rubber	ETFE	ethylene-tetrafluoroethylene copolymer
BS	butadiene styrene rubber	ETP	engineering thermoplastics
CA	cellulose acetate	EVA(C)	polyethylene-vinyl acetate
CAB	cellulose acetate butyrate	EVOH	polyethylene-vinyl alcohol copolymers
CAD	computer aided design	FDA	Food and Drug Administration
CAE	computer aided engineering	FEP	fluorinated ethylene propylene copolymer
CAM	computer aided manufacturing	FPVC	flexible polyvinyl chloride
CAP	cellulose acetate propionate	FR	flame retardant
CAP	controlled atmosphere packaging	FRP	fiber reinforced plastic
CBA	chemical blowing agent	GIM	gas injection molding
CF	cresol formaldehyde	GIT	gas injection technique
CFA	chemical foaming agent	GMT(P)	glass mat reinforced thermoplastics
CFC	chlorofluorocarbons	GPC	gel permeation chromatography
CFR	Code of Federal Regulations	GPPS	general purpose polystyrene
CHDM	cyclohexanedimethanol	GRP	glass fiber reinforced plastics
CIM	computer integrated manufacturing	GTP	group transfer polymerization
CN	cellulose nitrate	HALS	hindered amine light stabilizer
COP	copolyester	HAS	hindered amine stabilizers
COPA	copolyamide	HB	Brinell hardness number
COPE	copolyester	HCFC	hydrochlorofluorocarbons
CP	cellulose propionate	HCR	heat-cured rubber
CPE	chlorinated polyethylene	HDI	hexamethylene diisocyanate
CPET	crystalline polyethylene terephthalate	HDPE	high-density polyethylene
CPP	cast polypropylene	HDT	heat deflection temperature
CPVC	chlorinated polyvinyl chloride	HFC	hydrofluorocarbons
CR	chloroprene rubber	HIPS	high-impact polystyrene
CS	casein	HMDI	diisocyanato dicyclohexylmethane
CSD	carbonated soft drink	HMW	high molecular weight
CTA	cellulose triacetate	HNP	high nitrile polymer
CVD	chemical vapor deposition	IM	injection molding
DABCO	diazobicyclooctane	IMC	in-mold coating
DAM	days after manufacture	IMD	in-mold decoration
DAM	diallyl maleate	IPI	isophorone diisocyanate
DAP	diallyl phthalate	IV	intrinsic viscosity
DCPD	dicyclopentadiene	LCP	liquid crystal polymers
DE	diatomaceous earth	LIM	liquid injection molding
DEA	dielectric analysis	LDPE	low-density polyethylene
DETDA	diethyltoluenediamine	LLDPE	linear low-density polyethylene
DMA	dynamic mechanical analysis	LP	low-profile resin
DSC	differential scanning analysis	MAP	modified atmosphere packaging
DMT	dimethyl ester of terephthalate	MbOCA	3,3'-dichloro-4,4'-diamino-diphenylmethane
DWV	drain, waste, vent (pipe grade)	MBS	methacrylate-butadiene-styrene



MC	methyl cellulose	PPA	polyphthalamide
MDI	methylene diphenylene diisocyanate	PPC	chlorinated polypropylene
MEKP	methyl ethyl ketone peroxide	PPE	polyphenylene ether, modified
MF	melamine formaldehyde	ppm	parts per million
MFI	melt flow index	PPO	polyphenylene oxide
MIS	management information systems	PPS	polyphenylene sulfide
MMA	methyl methacrylate	PPSU	polyphenylene sulfone
MPE	metallocene polyethylenes	PS	polystyrene
MPF	melamine-phenol-formaldehyde	PSU	polysulfone
MPPR	melt-processable rubber	PTA	purified terephthalic acid
MRP	manufacturing requirement planning	PTFE	polytetrafluoroethylene
MWD	molecular weight distribution	PU	polyurethane
NBR	nitrile rubber	PUR	polyurethane
NDI	naphthalene diisocyanate	PVC	polyvinyl chloride
NDT	nondestructive testing	PVCA	polyvinyl chloride acetate
NR	natural rubber	PVDA	polyvinylidene acetate
ODP	ozone depleting potential	PVDC	polyvinylidene chloride
OFS	organofunctional silanes	PVDF	polyvinylidene fluoride
OPET	oriented polyethylene terephthalate	PVF	polyvinyl fluoride
OPP	oriented polypropylene	PVOH	polyvinyl alcohol
O-TPV	olefinic thermoplastic vulcanizate	QMC	quick mold change
OEM	original equipment manufacturer	RFI	radio frequency interference
OSA	olefin-modified styrene-acrylonitrile	RHDPE	recycled high density polyethylene
PA	polyamide	RIM	reaction injection molding
PAEK	polyaryletherketone	RPET	recycled polyethylene terephthalate
PAI	polyamide imide	RTD	resistance temperature detector
PAN	polyacrylonitrile	RTM	resin transfer molding
PB	polybutylene	RTV	room temperature vulcanizing
PBA	physical blowing agent	SI	silicone plastic
PBAN	polybutadiene-acrylonitrile	SAN	styrene acrylonitrile copolymer
PBI	polybenzimidazole	SB	styrene butadiene copolymer
PBN	polybutylene naphthalate	SBC	styrene block copolymer
PBS	polybutadiene styrene	SBR	styrene butadiene rubber
PBT	polybutylene terephthalate	SMA	styrene maleic anhydride
PC	polycarbonate	SMC	sheet molding compound
PCC	precipitated calcium carbonate	SMC-C	SMC-continuous fibers
PCD	polycarbodiimide	SMC-D	SMC-directionally oriented
PCR	post-consumer recycle	SMC-R	SMC-randomly oriented
PCT	polycyclohexylenedimethylene terephthalate	SPC	statistical process control
PCTA	copolyester of CHDM and PTA	SQC	statistical quality control
PCTFE	polychlorotrifluoroethylene	SRIM	structural reaction injection molding
PCTG	glycol-modified PCT copolymer	TA	terephthalic acid
PE	polyethylene	TDI	toluene diisocyanate
PEBA	polyether block polyamide	TEO	thermoplastic elastomeric olefin
PEC	chlorinated polyethylene	TGA	thermogravimetric analysis
PEOT	3,4 polyethylene dioxithiophene	TLC	thermoplastic liquid crystal polymer
PEEK	polyetheretherketone	TMA	thermomechanical analysis
PEI	polyether imide	TMC	thick molding compound
PEK	polyetherketone	T/N	terephthalate/naphthalate
PEL	permissible exposure level	TPA	terephthalic acid
PEKEKK	polyetherketoneetherketoneketone	TP	thermoplastic
PEN	polyethylene naphthalate	TPE	thermoplastic elastomer
PES	polyether sulfone	TPO	thermoplastic olefins
PET	polyethylene terephthalate	TPU	thermoplastic polyurethane
PETG	PET modified with CHDM	TPV	thermoplastic vulcanizate
PF	phenol formaldehyde	TS	thermoset
PFA	perfluoroalkoxy resin	TWA	time-weighted average
PI	polyimide	UF	urea formaldehyde
PID	proportional, integral, derivative	UHMW	ultrahigh molecular weight
PBI	butyl rubber	ULDPE	ultralow-density polyethylene
PIM	powder injection molding	UP	unsaturated polyester resin
PLC	programmable logic controller	UR	urethane
PMDI	polymeric methylene diphenylene diisocyanate	UV	ultraviolet
PMMA	polymethyl methacrylate	VA(C)	vinyl acetate
PMP	polymethylpentene	VC	vinyl chloride
PO	polyolefins	VDC	vinylidene chloride
POM	polyacetal	VLDPE	very low-density polyethylene
PP	polypropylene	VOC	volatile organic compounds
		ZNC	Ziegler-Natta catalyst